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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5
482761

AUG 18 2000

REPLY TO THE ATTENTION OF:

DE-9J

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

CT Corporation System
c/o Registered Agent for Morton International, Inc.
1300 East 9th Street, Suite 1010
Cleveland, OH 44114

RE: RCRA § 3013 Administrative Order
Morton International, Inc.
U.S. EPA ID No. OHD 000 724 138

Dear Sir/Madam:

Enclosed is an Administrative Order issued to Morton International, Inc. (Morton) by the United States Environmental Protection Agency (EPA) pursuant to Section (§) 3013 of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6934.

The Order requires Morton to conduct monitoring, testing, analysis and reporting, in connection with Morton's facility located at 2000 West Street, Reading, Ohio. The Order also requires Morton to submit a proposal for such monitoring, testing, analysis and reporting not later than thirty (30) days from the date this Order is issued. Morton may request a conference with EPA to discuss the Order. Any such conference must be held during the thirty (30) days after the issuance of the Order.

If you have questions concerning this Order, or to schedule a conference, please contact Thomas Nash at 312/ 886-0552.

Sincerely yours,

Joseph M. Boyle

Joseph M. Boyle, Chief
Enforcement and Compliance Assurance Branch
Waste, Pesticides and Toxics Division

Enclosure

cc: Harold O'Connell, OEPA
Amy F. Bohler, OEPA
Bruce Beiser, Morton
Peter Palena, Rohm and Haas Co.
David Kurland, Rohm and Haas Co.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	**RCRA Docket No. R3013-5-00-001**
	)	
Morton International, Inc.	)	
2000 West Street	)	
Reading, Ohio 45215-3431	)	
	)	
EPA ID No. OHD 000 724 138	)	**PROCEEDING UNDER SECTION**
	)	**3013 OF THE RESOURCE**
Respondent.	)	**CONSERVATION AND RECOVERY**
	)	**ACT, 42 U.S.C. § 6934**

ORDER REQUIRING MONITORING, TESTING, ANALYSIS AND REPORTING

I. JURISDICTION

1. The Administrator of the United States Environmental Protection Agency (EPA) is issuing this Administrative Order (Order) to Morton International, Inc. (Morton) under Section (§) 3013 of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6934. The Administrator has delegated the authority to issue orders under RCRA § 3013 to the Chief, Enforcement and Compliance Assurance Branch; Waste, Pesticides and Toxics Division; U.S. EPA Region 5.

2. Morton International, Inc. (Morton or Respondent) is a corporation organized under the laws of the State of Indiana.

3. On June 30, 1989, the State of Ohio (State) received final authorization pursuant to RCRA § 3006(b), 42 U.S.C. § 6926(b), to operate a hazardous waste program in lieu of the federal hazardous waste program established under RCRA Subtitle C. Pursuant to the Memorandum of Agreement (MOA) between the State of Ohio and EPA, EPA expressly retains its rights to issue Orders and bring actions under § 3013 of RCRA and any other applicable federal statute.

4. This Order is based upon the administrative record compiled by EPA and incorporated herein by reference. The record is available for review by the Respondent and the public at EPA's regional office at 77 West Jackson Boulevard, Chicago, Illinois 60604.

II. PARTIES BOUND

5. The provisions of this Order shall apply to and be binding upon Respondent and its officers, directors, employees, agents, contractors, successors, and assigns.

6. No change in ownership, corporate, or partnership status relating to the facility described in this Order will in any way alter the status or responsibility of Respondent under this Order. Any conveyance by Respondent of title, easement, or other interest in the facility described herein, or a portion of such interest, shall not affect Respondent's obligations under this Order. Respondent shall be responsible for and liable for any failure to carry out all activities required of Respondent by this Order, irrespective of its use of employees, agents, contractors, or consultants to perform any such tasks.

7. Respondent shall provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order within seven (7) calendar days of the effective date of this Order, or on the date of such retention, and Respondent shall condition all such contracts on compliance with the terms of this Order.

8. Any documents transferring ownership and/or operations of the facility described herein from Respondent to a successor-in-interest shall include written notice of this Order. In addition, Respondent shall, no less than thirty (30) days prior to transfer of ownership or operation of the facility, provide written notice of this Order to its successor-in-interest, and written notice of said transfer of ownership and/or operation to EPA.

III. FINDINGS OF FACT

9. Respondent owns and operates a chemical manufacturing plant located at 2000 West Street, Reading, Ohio on approximately 34 acres (facility) in Hamilton County, Ohio.

10. Mill Creek runs along the western side of the facility. The creek which originates north of the facility, flows for approximately ten (10) miles south of the facility into the Ohio River. The Conrail Railroad tracks run along the eastern side of the facility. Bordering the facility to the north are Cincinnati Drum Service, a drum recycling facility; and Pristine, Inc., a former hazardous waste incineration and disposal facility which is currently a National Priorities List site. A public recreational area is located to the south. This recreational area (which consists of a city park, a public pool, athletic fields, and a municipal stadium) is owned by Morton and managed by the City of Reading. Approximately 12,000 residents live within a one (1)-mile radius of the facility, with the closest residences being located about 750 feet to the south of the Morton facility.

11. Prior to 1949, a dairy farm occupied the western and southern portions of the property currently occupied by the Morton facility. At the same time, the northern section was

occupied by a fireworks manufacturing facility which later became a winery and smokehouse. Since 1950, the facility has operated as a chemical manufacturing plant that produces additives for the plastic and petroleum industries, including synthetic heat stabilizers and lubricants for rigid polyvinyl chloride, asphalt performance chemicals, antioxidants, plastic lubricants, and specialty chemicals. In addition, the facility has supplied chemical products to the textile, paper, and other miscellaneous industries. Previous owners of the facility include Cincinnati Milling Machine, which conducted business under the name of Carlisle Chemical Works from 1949 to 1970, and later changed its name to Cincinnati Milacron; and Carstab Corporation (Carstab), a division of Thiokol, Inc., from 1980 to 1982. Carstab Corporation merged with Morton International Inc. in 1982. The companies separated in 1989, with Morton retaining ownership of the facility. According to a letter dated April 28, 2000, written by David Kurland, Senior Counsel for Rohm and Haas Company, on June 22, 1999, Morton International Inc. was acquired by Rohm and Haas Company. Mr. Kurland's letter states that although Morton is now a wholly owned subsidiary of Rohm and Haas "the owner and operator of the facility for legal and regulatory purposes continues to be Morton."

12. The facility is currently regulated under RCRA as a generator of hazardous waste. Wastes generated (currently or in the past) on-site include spent halogenated solvents (EPA Hazardous Waste Numbers F001 and F002), spent non-halogenated solvents (EPA Hazardous Waste Numbers F003, F004 and F005), recovered methanol (EPA Hazardous Waste Numbers U154, D001, F001, F003 and F005), liquid methanol by-product (EPA Hazardous Waste Numbers F002, F003 and F005), spent solvents and residues (EPA Hazardous Waste Numbers D001, D002, F002, F003 and F005), spent acidic solvents and residues (EPA Hazardous Waste Numbers D001 and D002), recovered acid layers (EPA Hazardous Waste Number D003), scrubber solutions from pollution control processes (EPA Hazardous Waste Numbers D002 and D003), laboratory wastes (EPA Hazardous Waste Numbers D001, D002, D003, D004, D005, D006, D008, D010, D011, U196, F002, F003 and F005), scrap residues containing arsenic and lead (EPA Hazardous Waste Numbers D004 and D008), filter papers and residues (EPA Hazardous Waste Numbers D001, D002, D004, D006 and D008), press cakes and filter cartridges (EPA Hazardous Waste Numbers D002 and D008), solid and liquid wastes from chemical processes (EPA Hazardous Waste Numbers D001, D002, D003, D004, D008, F003, F002 and F005), and spill cleanup solids (EPA Hazardous Waste Numbers D002, D004, D007, D008).[1]

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[1] EPA first promulgated regulations on May 19, 1980 (45 Fed. Reg. 33073), for the identification and listing of wastes that are regulated under RCRA as hazardous wastes for purposes of 40 C.F.R. Parts 262 through 265, 268, 270, 271, and 124 (regulatory hazardous wastes). Regulatory hazardous wastes include wastes that are designated by EPA Hazardous Waste Numbers beginning with the letters D, F, K, P and U. EPA Hazardous Waste Numbers D001 through D003 are described in 40 C.F.R. §§ 261.21 through 261.23. EPA Hazardous Waste Numbers D004 through D043 are described in 40 C.F.R. § 261.24. EPA Hazardous Waste Numbers beginning with "F" are listed and described in 40 C.F.R. § 261.31. EPA Hazardous

13. Local aquifers include unconsolidated glacial outwash deposits of gravel, sand and silt (upper aquifer) and permeable bedrock consisting of shale and limestone (lower aquifer). A 1959 Ohio Department of Natural Resources report states that the upper glacial deposits and the lower permeable bedrock are hydraulically connected. A potential exists for the facility's contaminants to migrate into the upper and lower aquifers.

14. Well fields located within three (3) miles of the facility supply drinking water to three (3) municipalities (Glendale, Lockland and Wyoming) with a population of over 19,000. The city's wells are screened near the surface of the bedrock. Two (2) former City of Reading well fields were located less than one (1) mile from the facility. Some of these wells were closed after concentrations of volatile organic compounds (VOCs) exceeding Maximum Contaminant Levels (MCLs), primarily 1,2-dichloroethane, were detected in the groundwater from the wells. The source of the VOC contamination has not been established due to the complex nature of the local geology.

15. The Respondent currently employs approximately 180 people at the facility.

Description of Study Areas

16. From 1950 to 1980, six former surface impoundments were used for neutralization and disposal of wastes consisting primarily of dilute hydrochloric acid, methanol, dilute sulfuric acid, resorcinol, and benzoic acid. The disposed wastes may have also contained metals, waste oils, and benzene compounds. Each impoundment is unlined and has been filled in with soil. See Facility Map from Attachment 1, "Former Surface Impoundments."

17. A 10,000-gallon fiberglass tank was formerly used as a hazardous waste neutralization treatment tank. The processes associated with the former hazardous waste tank included neutralization of low pH process wastewaters. Currently, this tank is used for product storage and the wastewater neutralization process has been transferred to a pH control system (see later text). Morton or the previous owner/operator(s) of the facility have not completed a certification of RCRA closure for this tank that complies with 40 C.F.R. § 265.111 . There are no available data to determine whether there have been any releases

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Waste Numbers beginning with "K" are listed and described in 40 C.F.R. § 261.32. EPA Hazardous Waste Numbers beginning with "P"and EPA Hazardous Waste Numbers beginning with "U" are listed and described in 40 C.F.R. § 261.33.

The scope of RCRA § 3013 extends not only to such regulatory hazardous wastes, but also to wastes that are hazardous wastes pursuant to RCRA § 1004(5), even though they might not be regulatory hazardous wastes.

from the tank from the time it was used as a hazardous waste management unit. See Facility Map from Attachment 1, "Former Neutralization Tank."

18. A concrete storage pad was used as a hazardous waste drum storage area. Hazardous wastes formerly stored in this area included ignitable waste, spent solvents and, potentially, other liquid hazardous wastes generated at the facility. The concrete pad contains several cracks. Morton or the previous owner/operator(s) of the facility have not completed a certification of RCRA closure for this storage area that complies with 40 C.F.R. § 265.111. There are no available data to determine whether there have been any releases from this area from the time it was used as a hazardous waste storage unit. See Facility Map from Attachment 1, "Former Drum Storage Area."

19. A 10,000-gallon steel aboveground tank was formerly used for storage of hazardous waste, including high pH wastewaters generated by the sulfurizing of fats and oils. The waste was periodically shipped off-site for disposal. The tank is currently used for storing fuel oil. Morton or the previous owner/operator(s) of the facility have not completed a certification of RCRA closure for this tank that complies with 40 C.F.R. § 265.111. There are no available data to determine whether there have been any releases from this tank from the time it was used as a hazardous waste management unit. See Facility Map from Attachment 1, "Former Sulfide Waste Treatment Tank."

20. A groundwater collection system is in place at the facility. This system consists of four components: a french drain, an extraction well, a collection sump and a concrete slurry wall. Contaminated groundwater containing VOCs, semivolatile organic compounds (SVOCs), metals, and, potentially, other contaminants is extracted from the subsurface and transferred to a groundwater treatment unit. A large portion of the treated groundwater is recirculated as make-up water in the facility's recirculating non-contact cooling water system. The remainder of the treated water is discharged to the Municipal Sewer District of Greater Cincinnati (MSDGC). The purpose of the groundwater collection system is to prevent contaminated groundwater from migrating off the site and into Mill Creek. Due to the facility lacking a ground-water monitoring program, there are no groundwater data available to evaluate the effectiveness of the groundwater collection system. See Facility Map from Attachment 1; "French Drain", "Extraction Well", "Collection Sump", and "Concrete Slurry Wall."

21. The facility's wastewater enters a combined sewer system that flows to a pH control system and ultimately discharges to the MSDGC (the facility's wastewater includes a combination of specialty chemical process streams, wash down, cooling water, boiler plant blowdown, sanitary waste, and storm water runoff). The combined sewer system includes floor trenches and weir pits. Prior to the installation of the pH control system in 1993, the combined sewer system discharged directly to the MSDGC and portions of the unit may have potentially discharged to the former surface impoundments. Based on a July 8, 1998, Preliminary Assessment/Visual Site Inspection (PA/VSI) Report from

TechLaw, Inc. (TechLaw), TechLaw representatives were not able to obtain information regarding the construction and exact location of the combined sewer system, including information on how the trenches and the weir pits are connected to the pH control system. In addition, TechLaw representatives were not able to obtain information regarding the constituents of the wastewater. There are no available data to determine whether there have been any releases from the combined sewer system. See Facility Map from Attachment 1, "Location of the Combined Sewer System Unknown."

22. A former swale area may have been used as a dumping ground prior to 1950 when the property was part of a dairy farm. In the early 1950's this area may have been used for the disposal of lime sludge by Carlisle Chemical Works. The area was investigated by OEPA in June 1980 in response to a complaint from a former employee alleging the dumping of waste drums in this area. The results from the Ohio Environmental Protection Agency (OEPA) investigation and further sampling and analysis in this area indicate that there have been releases of VOCs and metals from the swale area into soil and groundwater. See Facility Map from Attachment 1, "Former Swale Area."

23. Based on TechLaw's PA/VSI Report, in June 1979, OEPA became aware of possible releases at Carstab after OEPA personnel observed discolored groundwater leaching from the east bank of Mill Creek along the boundary of Carstab and Cincinnati Drum. The PA/VSI Report adds that during a July 30, 1980, meeting with Carstab representatives, OEPA requested that Carstab perform a hydrogeologic study to determine the source of leachate at Mill Creek and to identify a method of controlling or removing the leachate releases. See Facility Map from Attachment 1, "Mill Creek."

Notifications and Inspections

- **Notification of Hazardous Waste Activity; Part A and Part B applications; and change from treatment, storage and disposal facility to generator status**

24. Pursuant to §3010 of RCRA, Carstab notified EPA of its hazardous waste activity. In its notification dated August 8, 1980, Carstab identified itself as a generator of hazardous waste and an owner/operator of a treatment, storage, and/or disposal facility for the following hazardous wastes:

    (A) Hazardous wastes from non-specific sources identified at 40 C.F.R. §261.31 including F005 (spent non-halogenated solvents); commercial chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or manufacturing chemical intermediates identified at 40 C.F.R. §261.33(f), including U154 (methanol);

(B) Hazardous wastes exhibiting the characteristic of ignitability, corrosivity, reactivity, and toxicity identified at 40 C.F.R. §261.21 through 261.24, including D001, D002, D003, and D000 (the type of toxicity was not specified); and

(C) Other listed materials may occasionally be disposed of in small quantities from laboratory operations.

25. Carstab submitted to EPA a RCRA Part A application dated November 13, 1980, that identified the following hazardous wastes at the facility (hazardous waste was managed as follows: container storage (S01), 350,000 gallons capacity; tank storage (S02), 17,000 gallons capacity; and tank treatment (T01), 59,000 gallons per day):

(A) Hazardous wastes from non-specific sources identified at 40 C.F.R. §261.31 including F001 (spent halogenated solvents), F003, F004, and F005 (spent non-halogenated solvents);

(B) Hazardous wastes exhibiting the characteristic of ignitability, corrosivity, reactivity, and toxicity identified at 40 C.F.R. §261.21 through 261.24, including D001, D002, D003, and D000 (the type of waste toxicity was not specified).

26. In a March 31, 1982, letter to Carstab, EPA requested submission of a RCRA Part B application for the facility.

27. In a September 14, 1982, letter, Carstab notified EPA of its decision to revert to generator status effective October 1, 1982.

28. On April 1, 1985, the Ohio Environmental Protection Agency (OEPA) issued a letter to Dr. Raymond Phillips of Carstab confirming that the Hazardous Waste Activity Status for the facility was that of generator only with less than ninety (90) day storage.

29. On June 29, 1989, EPA received a Notification of Hazardous Waste Activity from Morton, dated June 26, 1989, which indicated the change in ownership of the facility to Morton International, Inc. In addition, Morton identified itself as a generator only with less than ninety (90) day storage. Four wastes from nonspecific sources were included: F001, F002 (spent halogenated solvents), F003, and F005 (spent non-halogenated solvents). Four wastes exhibiting characteristics of Non-Listed Hazardous Wastes were included: D001 (ignitable), D002 (corrosive), D003 (reactive), and D000 (characteristic of toxicity--the type of waste toxicity was not specified).

30. Morton currently stores hazardous waste for less than ninety (90) days in a Hazardous Waste Storage Area. The Hazardous Waste Storage Area is not a study area at the facility.

The facility's study areas are identified and described above in this section of the Order under "Description of Study Areas".

- **Notification of Hazardous Waste Site**

31. Carstab submitted a Notification of Hazardous Waste Site to EPA pursuant to § 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), dated June 1, 1981. According to the notification, from 1950 to 1980, Carstab Corporation handled wastes from chemical sources, including organics, inorganics, acids, and bases. The notification identifies six (6) impoundments formerly used for treatment, storage and disposal, consisting of one clean water basin, two settling ponds, and three limestone-filled neutralization pits. As the notification indicates, the settling ponds were dredged of sludge and all impoundments were filled. The notification also indicates that "A small area near or under the parking lot is suspected of being used for disposal of building materials and waste sludge in the early fifties. A few drums of waste may have been buried in the lower part of the plant."

- **1990 CERCLA Screening Site Inspection (SSI)**

32. As documented by an August 19, 1991, CERCLA Screening Site Inspection (SSI) Report for Carstab prepared for EPA by Ecology and Environment, Inc. (E&E), E&E collected groundwater and soil samples from various areas of the facility in order to determine whether EPA Target Compound List (TCL) compounds and Target Analyte List (TAL) analytes were present at the facility. Also, E&E collected a sediment sample from a location situated on the east bank of Mill Creek, adjacent to the northwest corner of the facility's property. Samples were analyzed for EPA TCL VOCs, SVOCs, pesticides, and polychlorinated biphenyls (PCBs), and EPA TCL metals.

33. Groundwater samples were collected only from the upper aquifer.

34. Analytical results from the groundwater sampling revealed the presence of VOCs, SVOCs, and metals in groundwater, including the following (maximum concentration values in parenthesis): chlorobenzene (56 parts per billion [ppb]), 1,2-dichlorobenzene (12 ppb), arsenic (32.7 ppb), and vanadium (660 ppb).

35. The analytical results from the soil sampling revealed the presence of VOCs, SVOCs, PCBs, and metals in soil, including the following (maximum concentration values in parenthesis): Aroclor 1254 (550 ppb), arsenic (8.7 ppb), chlorobenzene (12,000 ppb), 1,2-dichlorobenzene (3,300,000 ppb), ethylbenzene (1,600 ppb), fluoranthene (1,000 ppb), pyrene (740 ppb), toluene (5,000 ppb), xylenes (82 ppb), and vanadium (30.8 ppb). Concentration values in parenthesis are estimated with the exception of those from fluoranthene and vanadium.

36. The analytical results from sediment sampling revealed the presence of VOCs, SVOCs, and metals in sediments including the following (concentration values in parenthesis): benzo(a)anthracene (370 ppb), benzo(a)pyrene (440 ppb), benzo(k)fluoranthene (400 ppb), bis(2-ethylhexyl)phthalate (500 ppb), 2-butanone (180 ppb), chlorobenzene (54 ppb), ethylbenzene (82 ppb), fluoranthene (1,000 ppb), phenanthrene (540 ppb), pyrene (740 ppb), xylenes (82 ppb), and vanadium (17.9 ppb). Concentration values in parenthesis are estimated with the exception of those from fluoranthene and vanadium.

37. All of the examples of SVOCs cited above are also known as polycyclic aromatic hydrocarbons (PAHs) with the exception of bis(2-ethylhexyl)phthalate.

- **1993 CERCLA Expanded Site Inspection Report**

38. Based on a May 7, 1993, CERCLA Expanded Site Inspection (ESI) Report for Carstab prepared for EPA by PRC Environmental Management, Inc. (PRC), PRC collected samples from groundwater and soil from various areas of the facility in order to document any observed releases, levels of contamination, and attribution of hazardous substances. Also, PRC collected sediment samples on the eastern bank of Mill Creek adjacent to the facility. The samples were analyzed for EPA TCL VOCs, SVOCs, pesticides, and PCBs. Also, the samples were analyzed for EPA TAL metals and cyanide.

39. Groundwater samples were collected only from the upper aquifer.

40. Analytical results from the groundwater sampling revealed the presence of VOCs, SVOCs, and metals in groundwater, including the following (maximum concentration values in parenthesis): acetone (2,700 ppb), benzene (48 ppb), chlorobenzene (2,300 ppb), 1,2-dichlorobenzene (4,700 ppb), 1,4-dichlorobenzene (640 ppb), ethylbenzene (110 ppb), nickel (57.7 ppb), toluene (630 ppb), vanadium (14.6 ppb), and xylene (360 ppb).

41. Analytical results from soil sampling revealed the presence of SVOCs, PCBs, and metals in soil, including the following (maximum concentration values in parenthesis): Aroclor 1254 (1,000 ppb as estimated), dibenzo(a,h)anthracene (900 ppb), benzo(a)pyrene (7,600 ppb), benzo(g,h,i)perylene (3,300 ppb), bis(2-ethylhexyl)phthalate (1,200 ppb), indeno(1,2,3-c,d)pyrene (3,600 ppb), and vanadium (29.3 ppb).

42. Analytical results from sediment sampling conducted at a location adjacent to the former surface impoundments (location S-12), revealed the presence of VOCs, SVOCs, PCBs, and metals in sediments, including the following (concentration values in parenthesis): Aroclor 1254 (120 ppb), benzo(a)anthracene (360 ppb), benzo(a)pyrene (320 ppb), benzo(g,h,i)perylene (280 ppb), benzo(k)fluoranthene (310 ppb), bis(2-ethylhexyl)phthalate (210 ppb), chlorobenzene (16 ppb), chrysene (410 ppb), fluoranthene (970 ppb), indeno(1,2,3-c,d)pyrene (260 ppb), phenanthrene (540 ppb),

pyrene (850 ppb), and vanadium (17.8 ppb). Concentration values in parenthesis are estimated with the exception of those from chlorobenzene, fluoranthene, chrysene, and vanadium.

43. All of the examples of SVOCs cited above are also known as PAHs with the exception of bis(2-ethylhexyl)phthalate.

- **1998 RCRA Preliminary Assessment/Visual Site Inspection (PA/VSI)**

44. Prior to conducting a VSI at the facility, TechLaw conducted a PA of the available EPA and OEPA file materials regarding past compliance history, evidence of past releases, potential migration pathways, potential for exposure to any released hazardous constituents, closure methods and dates, citizen complaints, manufacturing processes and waste management practices at the Morton facility. The PA conducted by TechLaw documented the following:

    (A) From December 1980 to January 1981, Carstab installed fourteen (14) groundwater monitoring wells for the purpose of conducting a hydrogeologic investigation as requested by OEPA. The results from the Carstab investigation did not provide adequate data to satisfy the OEPA requirements.

    (B) On May 21, 1982, OEPA requested that the former swale area be investigated for the presence of buried drums, buried optical brighteners waste, and any potential groundwater contamination.

    (C) On December 1, 1982, and January 12, 1983, OEPA issued to Carstab the Director's Final Findings and Orders requesting that Carstab complete additional studies to determine the extent of off-site migration of wastes from the facility, including leachate entering Mill Creek, and to identify appropriate remedial measures.

45. On May 12, 1998, TechLaw conducted a VSI at the facility. The purpose of the inspection was to identify and characterize solid waste management units (SWMUs) and areas of concern. A total of eleven SWMUs were identified, including the former surface impoundments (SWMU 1), former neutralization tank (SWMU 2), former drum storage area (SWMU 3), hazardous waste drum storage area (SWMU 4), former sulfide waste treatment tank (SWMU 5), groundwater collection system (SWMU 6), groundwater treatment unit (SWMU 7), satellite waste accumulation areas (SWMU 8), pH control system (SWMU 9), former swale area (SWMU 10) and combined sewer system (SWMU 11).

46. According to a July 8, 1998, PA/VSI Report prepared for EPA by TechLaw: "releases to soil and groundwater are documented at the Former Surface Impoundments (SWMU 1) and the Former Swale Area (SWMU 10), resulting in the designation of a high release potential for these units. The Groundwater Collection System (SWMU 6) and Groundwater Treatment Unit (SWMU 1) were installed to collect and treat contaminated groundwater and prevent off-site migration of contaminants through the shallow aquifer. Thus, although the release potential is high for SWMU 1 and 10, the facility has apparently implemented measures to prevent off-site migration of hazardous constituents through shallow groundwater. The effectiveness of the Groundwater Treatment Unit (SWMU 7) in removing contaminants should be analyzed, however, in order to ensure that the treated water does not pose a further threat of contamination. In addition, since it appears that deeper portions of the aquifer are used for domestic purposes in the vicinity of the Morton facility, potential contaminant migration from the Former Surface Impoundments (SWMU 1) and Former Swale Area (SWMU 10) to the deeper portions of the aquifer should be investigated. Furthermore, it is recommended that sediments in Mill Creek (adjacent to the facility) be investigated to determine the extent of impacts from past contaminated leachate releases associated with the Former Surface Impoundments (SWMU 1)." Also, the report indicates that "The Combined Sewer System (SWMU 11) was not directly observed during the VSI, and the construction and exact location were not confirmed by Morton representatives. Additional information regarding the Combined Sewer System (SWMU 11) should be provided by Morton representatives so that the potential for release from the unit can be determined."

Effects on Human Health or the Environment

47. The constituents identified as present at the site by the CERCLA inspections, as described above in paragraphs 32- 43 may cause the following effects on human health or the environment:

(A) Acetone: Dermal absorption and inhalation are the main routes of exposure to acetone. Acute (short-term) exposure can cause dizziness and/or loss of consciousness. Chronic (long-term) exposure may damage the liver and kidneys. Acetone has a slight chronic and acute toxicity to aquatic life.

(B) Arsenic: Arsenic is a known carcinogen, and a potential teratogenic agent. Its main path of exposure to humans is through inhalation and dermal absorption. Long term exposure can cause nerve and liver damage, narrowing of the blood vessels, and affect red blood cell production. Arsenic in the presence of acid may release a deadly gas, arsine. Potential health effects from ingestion include skin damage; circulatory system problems, and increased risk of cancer. Arsenic has high acute toxicity to aquatic life, birds, and land animals. It has a low solubility in water and is

persistent in water, with a half-life of 200 days. Arsenic has high chronic toxicity to aquatic life, and is known to bioaccumulate in fish tissues.

(C) Benzene: Benzene is a possible component of petroleum and grease. It is a carcinogen in humans and possibly a teratogen. Short-term exposures can cause dizziness, convulsions, irregular heartbeat and even death. Long-term exposures can cause aplastic anemia, which can cause death. Benzene has high acute toxicity to aquatic life. Long-term exposures in the environment cause shortened life spans, reproductive problems, and lower fertility. Benzene is a component of petroleum and is used as a solvent.

(D) Bis(2-ethylhexyl)phthalate: Bis(2-ethylhexyl) phthalate is a carcinogen and a teratogen and may damage the testes. Repeated exposure may affect the kidneys and liver. This chemical has applications in pump operations.

(E) 2-butanone (methyl ethyl ketone): Acute (short-term) exposure to this chemical, via inhalation, results in irritation to the eyes, nose and throat, and can depress the central nervous system. Limited information is available on the chronic (long-term) effects of methyl ethyl ketone in humans. However, studies in animals have reported effects on the central nervous system, liver, and respiratory system, and impaired fetal development, as well as fetal malformation. Methyl ethyl ketone is used as a solvent.

(F) Chlorobenzene: This chemical is classified as a human toxicant. Long-term exposure of humans to chlorobenzene affects the central nervous system. Signs of neurotoxicity include numbness, cyanosis, hyperesthesia (increased sensation), and muscle spasms. Chlorobenzene is used as a solvent for paints and as a heat transfer medium.

(G) 1,2-dichlorobenzene (o-dichlorobenzene): Long-term exposure to this chemical through ingestion can potentially cause damage to the nervous system, liver, kidneys and blood cells. This chemical is used as solvent for waxes, gums, tars, and other petroleum derivatives, and as a degreasing agent and a heat transfer medium.

(H) 1,4-dichlorobenzene (p-dichlorobenzene): Short-term exposure to this chemical, via inhalation in humans, causes irritation of the skin, throat, and eyes. Long-term inhalation exposure in humans results in effects on the liver, skin, and central nervous system. This chemical is used as an insecticidal fumigant.

(I) Ethylbenzene: Very high acute exposures can cause trouble breathing, paralysis, and death. There is some evidence to suggest ethylbenzene may damage a developing fetus. High chronic exposure may cause liver damage. Ethylbenzene has a high chronic and acute toxicity to aquatic life. Ethylbenzene is a component of petroleum and is sometimes used as a solvent.

(J) Nickel: Nickel carbonyl is the most acutely toxic form of nickel in humans, with the lung and the kidney as the target organs. Symptoms such as headache, vomiting, chest pains, dry coughing, and visual disturbances have been reported from acute inhalation exposure in humans. Contact dermatitis, consisting of itching of the fingers, wrists, and forearms, is the most common effect in humans from long-term nickel exposure. Respiratory effects, such as asthma and an increased risk of chronic respiratory infections, have also been reported in humans from inhalation exposure to nickel.

(K) Polychlorinated Biphenyls (PCBs): Aroclor 1254 is a chlorobiphenyl, one of the primary chemicals in PCBs, named according to the percentage of chlorine in the mixture (54%). Others include aroclor 1242, 1248, and 1260. The main path of exposure to humans is through inhalation and dermal absorption. Short-term exposure to PCBs can damage the liver. Chronic exposures pose cancer risks, possible liver damage, and damage to the nervous system. Dermal and ocular effects, including skin irritation, chloracne, hyperpigmentation and eyelid and conjunctival irritation, have been observed in humans occupationally exposed to aroclor 1254 and other aroclor formulations. Acute toxic effects of PCBs in the environment may include death of animals, birds, or fish. PCBs have high chronic toxicity to aquatic life, and are known to bioaccumulate in fish.

(L) Polycyclic aromatic hydrocarbons (PAHs): PAHs are a group of over 100 different chemicals that are present in the heavy fraction of petroleum distillate and produced from the incomplete burning of coal, petroleum and other organic substances. Acenaphthene can cause liver and kidney damage at high levels. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene and indeno(1,2,3-c,d)pyrene and others are human carcinogens. Carbazole and chrysene are possible human carcinogens. In addition, laboratory mice ingesting benzo(a)pyrene developed birth defects. Acenaphthylene, benzo(a)anthracene, benzo(k)fluoranthene, and phenanthrene may be mutagenic. Carbazole is capable of causing death or permanent injury due to exposures of normal use. It can be incapacitating and poisonous and requires special handling. PAHs tend to combine with dust and are carried

into water, soil and crops. PAHs are often associated with petroleum, coal and coke products.

(M) Toluene: The main concerns in chronic exposures is possible mutations in living cells, possible damage to a developing fetus, and liver damage. Exposure to this chemical has also been linked to problems in the nervous system, kidney, and circulatory problems. Toluene has been suspected to cause congenital defects in infants born to mothers who were exposed to or who abused toluene during pregnancy. Toluene has caused leaf membrane damage in plants. It may accumulate in fish tissues. Toluene is a component of petroleum and is also used as a solvent.

(N) Vanadium: In the form of vanadium pentoxide, this chemical is classified as a toxicant and has been associated with respiratory and skin irritation through inhalation and dermal exposure. Laboratory studies in animals have shown the development of histopathologic changes in lungs and decrease in growth rate. Among other manufacturing applications, vanadium pentoxide is used as a developer in photography and in the manufacturing of yellow glass inhibiting ultraviolet light transmission.

(O) Xylenes: Acute exposure to xylenes can cause nausea and lightheadedness. Xylenes may damage the developing fetus. Chronic effects include bone marrow damage, low blood cell count, liver damage, and kidney damage. Xylene is moderately soluble in water, and its chronic toxic ecological effects may include shortened life span, reproductive problems, and lower fertility. Xylenes are components of petroleum and are also used as a solvent.

IV. CONCLUSIONS OF LAW

48. Respondent's facility is a "facility or site" within the meaning of § 3013(a) of RCRA, 42 U.S.C. § 6934(a).

49. Respondent is a "person" as defined in § 1004(15) of RCRA, 42 U.S.C. § 6903(15).

50. Respondent is an "owner" and "operator" of the facility within the meaning of § 3013(a) of RCRA, 42 U.S.C. § 6934(a).

51. § 1004(27) of RCRA, 42 U.S.C. § 6905(27) defines the term "solid waste" to mean "any garbage, refuse . . . and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations . . ."

52. § 1004(5) of RCRA, 42 U.S.C. § 6903(5), defines the term "hazardous waste" to mean:

> a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may-
>
> > (A) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
> >
> > (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

53. § 1004(3) of RCRA, 42 U.S.C. § 6903(3), defines the term "disposal" to mean "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters."

V. FINDING OF SUBSTANTIAL HAZARD

Upon the basis of the foregoing Findings of Fact, and pursuant to § 3013(a) of RCRA, 42 U.S.C. § 6934(a), EPA makes the following determinations:

54. Hazardous wastes within the meaning of § 1004(5) of RCRA, 42 U.S.C. § 6903(5), are present at the facility and were treated, stored or disposed there.

55. The presence of hazardous wastes at the facility and/or the release of hazardous wastes from the facility may present a substantial hazard to human health or the environment.

56. The action required by this Order are reasonable to ascertain the nature and extent of such hazard.

VI. ORDER

57. Based on the Findings of Fact, Conclusions of Law and Findings of Substantial Hazard as set forth above, Respondent is hereby ordered, pursuant to § 3013 of RCRA, 42 U.S.C. § 6934, to submit three (3) copies of a written proposal to EPA within thirty (30) days from the issuance of this Order, for carrying out monitoring, testing, analysis, and reporting in order to ascertain the nature and extent of the hazard posed by the hazardous wastes that are present at or that may have been released from the study areas at the Respondent's facility. The facility's study areas are identified and described in Section III of this Order under "Description of Study Areas". Respondent is hereby ordered to implement such proposal once approved, or modified and approved, by EPA. Respondent is hereby

ordered to complete implementation of such proposal by June 1, 2002. All work undertaken pursuant to this Order shall be performed in a manner consistent with "Interim Final RCRA Facility Investigation (RFI) Guidance," Volumes I-IV, EPA/530/SW-89-031, May 1989, and all other applicable EPA guidance. Applicable guidance may include, but is not limited to, documents listed in Attachment 2: References. Respondent's written proposal shall be specific and shall include, but is not limited to, the following:

(A) a work plan, including schedule and proposal for progress reports, to evaluate (based on field data, tests, and cores) the hydrogeologic conditions at the facility and Mill Creek, including the determination and description of: (i) regional and facility specific stratigraphy and distribution of hydrogeologic units; (ii) regional and facility specific groundwater flow patterns, recharge and discharge areas, and seasonal variations in the groundwater flow regime; (iii) characteristics of hydrogeologic units, including hydraulic conductivity and hydraulic interconnections between saturated zones; (iv) hydrogeologic cross-sections showing the extent of hydrogeologic units in the vicinity of the facility; (v) water-level contours and/or potentiometric maps; (vi) the direction and velocity for the vertical and horizontal components of flow at the facility, (vii) man-made influences that may affect the hydrogeology of the facility such as the groundwater collection system at the site (i.e., the system's design, operation, and objectives).

(B) a work plan, including schedule and proposal for progress reports, to characterize the location, design, and operation of the combined sewer system.

(C) a soil sampling and analysis work plan, including schedule and proposal for progress reports, to collect and analyze representative soil samples to determine the nature and extent of any soil contamination in and around the former surface impoundments, the former neutralization tank, the former drum storage area, the former sulfide waste treatment tank, the former swale area and the combined sewer system. The plan shall include the number, location, depth of samples, the analysis parameters, and quality assurance measures.

(D) a sediment sampling and analysis work plan, including schedule and proposal for progress reports, to collect and analyze representative sediment samples to determine the nature and extent of contamination in sediments in Mill Creek adjacent to and downstream from the former surface impoundments, the former neutralization tank, the former drum storage area, the former sulfide waste treatment tank, the former swale

area, and the combined sewer system. The plan shall include the number, location, depth of samples, the analysis parameters, and quality assurance measures.

(E) a leachate and run-off sampling and analysis work plan, including schedule and proposal for progress reports, to determine the nature and extent of contaminated leachate and run-off flowing into Mill Creek from portions of the facility adjacent to and downstream from the former surface impoundments, the former neutralization tank, the former drum storage area, the former sulfide waste treatment tank, the former swale area and the combined sewer system. The plan shall include the number, location, depth of samples, the analysis parameters, and quality assurance measures.

(F) a groundwater sampling and analysis work plan, including schedule and proposal for progress reports, to characterize the groundwater quality and the extent of any groundwater contamination, both vertically and horizontally, which may exist in, around or on the former surface impoundments, the former neutralization tank, the former drum storage area, the former sulfide waste treatment tank, the former swale area and the combined sewer system. The plan shall include the number, location and frequency of samples to be taken, the analysis parameters, and quality assurance measures.

58. Each of the required work plans described above shall be designed to define the nature, location, extent, direction and rate of movement of any hazardous wastes or hazardous waste constituents which are present at or have been released from the facility. Each work plan shall document the procedures the Respondent shall use to conduct the investigations necessary: (1) to characterize the potential pathways of migration of hazardous waste and hazardous waste constituents; (2) characterize the sources of hazardous waste and/or hazardous waste constituent contamination; (3) define the degree and extent of hazardous waste and/or hazardous constituent contamination; and (4) identify actual or potential receptors.

59. Respondent shall insure that laboratories used by Respondent for analyses perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be proposed, Respondent shall submit all protocols to be used for analysis to EPA at least thirty (30) calendar days prior to the commencement of the analyses. Respondent shall also ensure that laboratories used by

Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA.

60. Based on work performed under the work plans described above, EPA may determine that additional investigation, analysis, and/or reporting is necessary to meet the purposes of this Order. If EPA determines that Respondent shall perform additional work, EPA will notify Respondent in writing and specify the basis for its determination that additional work is necessary. Within fifteen (15) days after the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work. If required by EPA, Respondent shall submit for EPA approval a work plan for the additional work. EPA will specify the contents of such work plan. Such work plan shall be submitted by Respondent within thirty (30) days of receipt of EPA's determination that additional work is necessary, or according to an alternative schedule established by EPA.

61. The written proposal and all reports or documents required to be submitted under this Order shall be mailed to:

Mirtha Capiro, Project Coordinator
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard, DE-9J
Chicago, IL 60604

VII. SUBMISSIONS / AGENCY REVIEW

62. EPA will review all plans, reports, or other submittals required under this Order. EPA may: (a) approve the submission, (b) approve the submission with modifications, (c) disapprove the submission and direct Respondent to re-submit the document after incorporating EPA's comments, or (d) disapprove the submission and assume responsibility for performing all or any part of the work. As used in this Order, the terms "approval by EPA," "EPA approval," or a similar term means the action described in (a) or (b) of this paragraph.

63. Prior to approval in writing, or approval with modifications in writing, no plan, report, or other submittal shall be construed as approved and final. Oral advice, suggestions, or comments given by EPA representatives will not constitute approval, nor shall any oral approval or oral assurance of approval be considered binding.

64. Upon receipt of a notice of disapproval in paragraph 62 above or a request for a modification, Respondent shall, within fifteen (15) days, or such longer time as specified by EPA in its notice of disapproval or request for modification, correct the deficiencies and resubmit the plan, report, schedule, other item for approval. Notwithstanding the notice of disapproval, or approval with modifications, Respondent shall proceed, at the

direction of EPA, to take any action required by any non-deficient portion of the submission.

65. Within ten (10) days following EPA approval, or approval with modifications, of the a plan, Respondent shall implement the approved document.

66. All plans, reports, and/or other submittals required by this Order are, upon approval or approval with modifications by EPA, incorporated into this Order as if fully set forth in text herein. Any noncompliance with such EPA-approved plans, reports, specifications, schedules, and attachments shall be noncompliance with this Order. Oral advice or approvals given by EPA representatives shall not relieve Respondent of its obligation to obtain any formal, written approvals required by this Order.

67. In all instances which this Order requires written submissions to EPA, each submission must be accompanied by the following certification signed by a "responsible official":

> I certify that the information contained in or accompanying this submission is true, accurate, and complete.

For the purpose of this certification, a "responsible official" means a person in charge of a principal facility function, or any other person who performs similar decision-making functions for the facility.

VIII. PROJECT COORDINATORS

68. EPA hereby designates as its Project Coordinator:

> Mirtha Capiro
> U.S. Environmental Protection Agency, Region 5
> 77 West Jackson Boulevard, DE-9J
> Chicago, IL 60604

69. Within ten (10) calendar days of Respondent's receipt of this Order, Respondent shall designate a Project Coordinator and submit the designated Project Coordinator's name, address, and telephone number in writing to EPA.

70. Each Project Coordinator shall, on behalf of the party that designated that Project Coordinator, oversee the implementation of this Order and function as the principal project contact.

71. Respondent shall provide EPA with a written notice of any change in its Project Coordinator. Such notice shall be provided at least seven (7) calendar days prior to the change in Project Coordinator.

IX. THREATS TO PUBLIC HEALTH OR THE ENVIRONMENT

72. If EPA's Project Coordinator determines that activities in compliance or noncompliance with this Order have caused or may cause a release of hazardous waste or waste constituents, or a threat to the public health or to the environment, EPA may require that Respondent stop further implementation of this Order for such a period of time as may be needed to abate any such release or threat and/or undertake any action which EPA determines is necessary to abate such release or threat; and may require Respondent to resume implementation of this Order.

X. SAMPLING AND DOCUMENT AVAILABILITY

73. The Respondent shall submit to EPA, upon request, the results of all sampling and/or tests or other data generated by, or on behalf of, the Respondent in implementing the requirements of this Order.

XI. ACCESS

74. Respondent shall provide access at all reasonable times to the facility and facility property and to all records and documentation relating to conditions at the facility and the activities conducted pursuant to this Order to EPA and its employees, contractors, agents, consultants, and representatives. These individuals shall be permitted to move freely at the facility in order to conduct activities which EPA determines to be necessary.

75. To the extent that activities required by this Order, or by any approved work plans prepared pursuant hereto, must be done on property not owned or controlled by Respondent, Respondent will use its best efforts to obtain site access agreements in a timely manner from the present owners of such property. Best efforts as used in this paragraph shall include the payment of reasonable compensation in consideration of granting access. Respondent shall provide EPA's Project Coordinator with a copy of any access agreements.

76. Nothing in this Order limits or otherwise affects EPA's right of access and entry pursuant to applicable law, including RCRA and CERCLA.

77. Respondent shall notify EPA in writing at least ten (10) calendar days before engaging in any field activities, including but not limited to sampling, well-drilling, and installation of equipment. At the request of EPA, Respondent shall provide or allow EPA or its authorized representatives to take split and/or duplicate samples of all samples collected by Respondent pursuant to this Order.

XII. RECORD PRESERVATION

78. Respondent shall retain, during the pendency of this Order and for a minimum of five (5) years after its termination, a copy of all data, records, and documents now in its possession or control, or in the possession of control of its contractors, subcontractors, representatives, or which come into the possession of control of the Respondent, its contractors, subcontractors, or representatives, which relate in any way to this Order. Respondent shall notify EPA, in writing, at least ninety (90) days in advance of the destruction of any such records, and shall provide EPA with the opportunity to take possession of any such records. Such written notification shall reference the caption, docket number and date of issuance of this Order and shall be addressed to:

Chief
Enforcement and Compliance Assurance Branch
Waste, Pesticides and Toxics Division
EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

In addition, Respondent shall provide data, records and documents retained under this Section at any time before the expiration of the five year period at the written request of EPA.

XIII. INFORMATION SUBMITTED TO EPA

79. Any information that Respondent is required to provide or maintain pursuant to this Order is not subject to the Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 et seq.

80. Respondent may assert a business confidentiality claim in the manner described in 40 C.F.R. § 2.203(b) covering all or part of any information submitted to EPA pursuant to this Order. Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made in accordance with 40 C.F.R. § 2.204(e)(4). Information submitted for which Respondent has asserted a claim of confidentiality as specified above shall be disclosed by EPA only to the extent and manner permitted by 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to the Respondent.

XIV. RESERVATION OF RIGHTS

81. EPA expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, including any which may pertain to Respondent's failure to comply with any of the requirements of this Order, specifically including, without

limitation, the right to commence a civil action against Respondent seeking an order requiring compliance with this Order and/or the assessment of penalties under § 3013(e) of RCRA, 42 U.S.C. § 6934(e), and all rights EPA has pursuant to RCRA § 3013(d) to conduct monitoring, testing and sampling at the facility, and to analyze any samples taken, and to seek reimbursement from Respondent for the costs of such activity. This Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, defenses, powers and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, the Safe Drinking Water Act (SDWA), the Clean Air Act (CAA), or any other statutory, regulatory, or common law enforcement authority of the United States.

82. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Order, and to order that Respondent perform additional tasks.

XV. OTHER APPLICABLE LAWS

83. All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable federal, state, and local laws, regulations, permits, and ordinances.

84. Compliance by Respondent with the terms of this Order shall not relieve Respondent of its obligations to comply with RCRA, or any other applicable federal, state, or local laws, regulations, permits, and ordinances.

85. This Order is not and shall not be interpreted to be a permit, or as a ruling or a determination of any issue related to a permit, under federal, state or local law; nor shall this Order in any way affect Respondent's obligation, if any, to secure such a permit; nor shall this Order be interpreted in any way to affect or waive any of the conditions or requirements that may be imposed as conditions of such permit or of Respondent's right to appeal any conditions of such permit. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

XVI. OTHER CLAIMS

86. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action, demand, or defense in law or equity, against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous waste constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or migrating from the facility.

87. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts of omissions of Respondent or its agents, contractors, subcontractors or other representatives.

88. Neither the United States nor EPA shall be a party or be held out as a party to any contact entered into by the Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out activities pursuant to this Order.

XVII. SUBSEQUENT MODIFICATION OF ORDER

89. Except as provided in paragraphs 72 and 90, this Order may only be modified by written amendment signed by the Branch Chief or the Regional Administrator, EPA, Region 5.

90. Modifications in any schedule adopted pursuant to this Order may be made in writing by EPA's Project Coordinator.

91. No informal advice, guidance, suggestions, or comments by EPA shall be construed to modify the requirements of this Order. Routine communications exchanged verbally, in person or by telephone, between the parties to facilitate the orderly conduct of work contemplated by this Order shall not alter or waive any rights and/or obligations of the parties under this Order.

XVIII. STATEMENT OF SEVERABILITY

92. If any provision or authority of this Order, or the application of this Order to any party or circumstances, is held by any judicial or administrative authority to be invalid, the application of such provisions to other Parties or circumstances and the remainder of the Order shall not be affected thereby.

XIX. TERMINATION AND SATISFACTION

93. Respondent may seek termination of this Order by submitting to EPA a written document which indicates Respondent's compliance with all requirements of this Order, and the associated dates of approval correspondence from EPA.

94. The provisions of this Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated to the satisfaction of EPA that the terms of the Order, including any additional tasks determined by EPA to be required pursuant to this Order, have been satisfactorily completed. This notice shall not, however, terminate Respondent's obligations to comply with any continuing obligations

hereunder, including without limitation, Section XII (Record Preservation), XIV (Reservation of Rights), and XV (Other Applicable Laws).

XX. OPPORTUNITY TO CONFER

95. In accordance with § 3013(c) of RCRA, 42 U.S.C. § 6934(c), Respondent or its representative may confer in person or by telephone with EPA regarding this Order. The opportunity to confer with EPA may be pursued by the Respondent before the proposal described in paragraph 57 from Section VI of this Order is due within thirty (30) days after the issuance of this Order. At such conference, Respondent may discuss the following with EPA: the Order, its applicability to the Respondent, the correctness of any factual determinations upon which the Order is based, the appropriateness of any action which Respondent is hereby ordered to undertake, and any other relevant and material issue.

96. The scheduling of a conference with EPA does not relieve Respondent of the obligation to submit the written proposal required under Section VI of this Order within thirty (30) days of the date of issuance of this Order, or to implement the proposal once approved, or approved with modifications, by EPA.

97. At the conference described above, Respondent may appear in person and/or by attorney or other representative. Additionally, Respondent may submit written comments to the EPA Project Coordinator addressing issues that could be raised in the conference within the time frames set for conducting such conference.

98. Any request for a conference with EPA, and other questions regarding this Order should be directed to:

Thomas Nash
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard, C-14J
Chicago, IL 60604
(312) 886-0552

If Respondent fails to request a conference within the time periods provided in this Section, or fails to agree upon a date to schedule such conference within the time periods provided in this section, Respondent shall be deemed to have waived its right under § 3013 of RCRA to confer with EPA regarding this Order.

XXI. POTENTIAL CONSEQUENCES OF FAILURE TO COMPLY

99. In the event Respondent fails or refuses to comply with the terms and provisions of this Order, EPA may commence a civil action in accordance with § 3013(e) of RCRA, 42 U.S.C. § 6934(e), to require compliance with such Order and to assess a civil penalty (consistent with 40 C.F.R. Part 19) not to exceed $5,500 for each day during which such failure or refusal occurs.

100. If EPA determines that Respondent is not able to conduct the activities required by this Order in a satisfactory manner, or if actions carried out are deemed unsatisfactory, then EPA or its representatives may conduct such actions deemed reasonable by EPA to ascertain the nature and extent of the hazard at the property and/or facility of Respondent. EPA or its representatives may then order Respondent to reimburse the costs of such activity pursuant to § 3013(d) of RCRA, 42 U.S.C. § 6934(d).

XXII. EFFECTIVE DATE/DATE OF ISSUANCE

101. The effective date of this Order is the date it is signed by the Branch Chief. The date of issuance of this Order shall be the same date as the effective date.

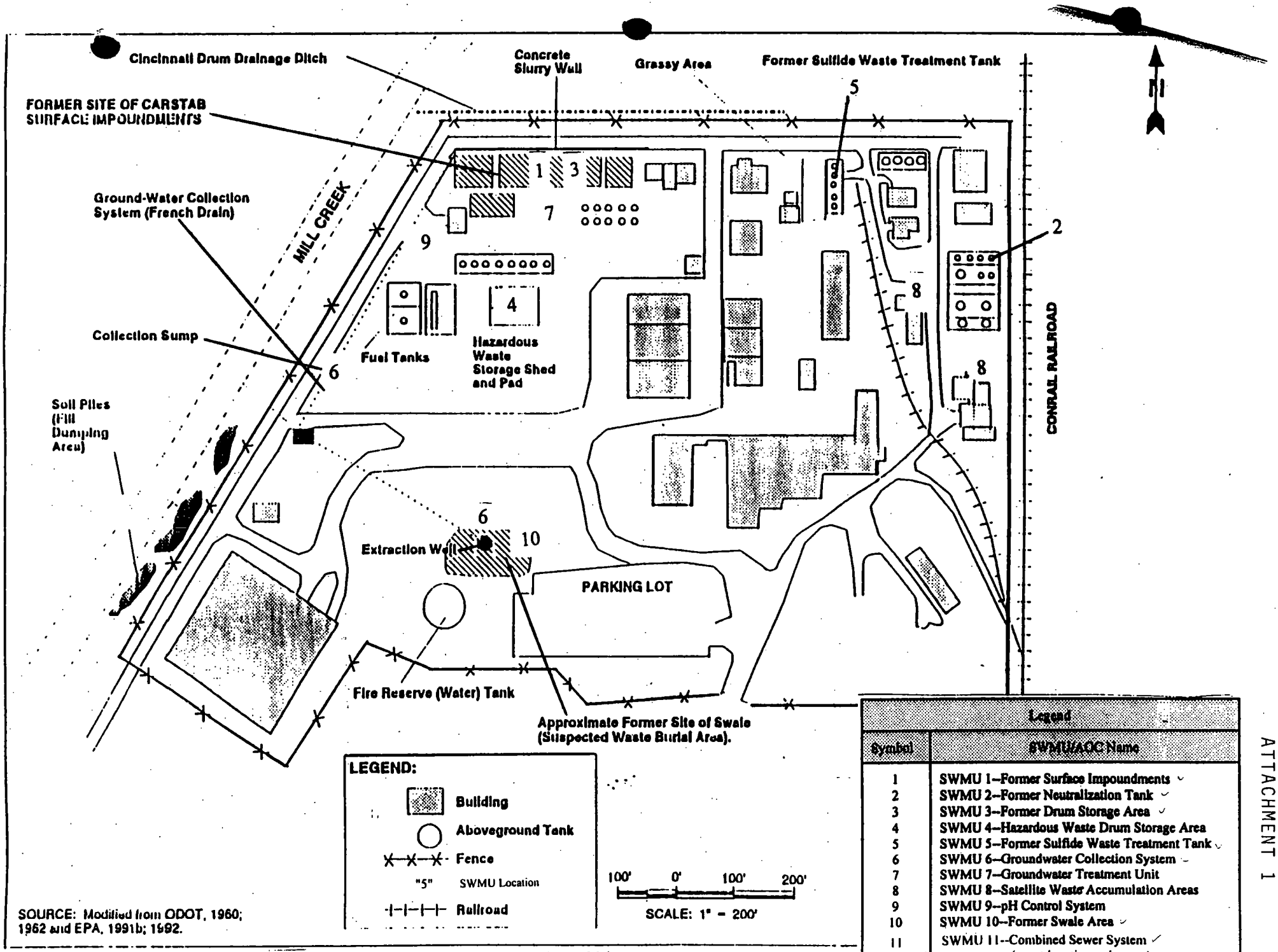
IN THE MATTER OF MORTON INTERNATIONAL, INC.
2000 West Street
Reading, Ohio 45215-3431

IT IS SO ORDERED

Joseph M. Boyle

Joseph Boyle, Chief
Enforcement & Compliance Assurance Branch
Waste, Pesticides and Toxics Division
U.S. Environmental Protection Agency/ Region 5

August 18, 2000
Date



Morton International, Inc., Reading, Ohio
Facility Layout and SWMU and AOC Location Map

ATTACHMENT 1

ATTACHMENT 2

REFERENCES
MORTON INTERNATIONAL, INC.
READING, OHIO
U.S. EPA ID No. OHD 000 724 138

The following list identifies guidance documents, in addition to those documents already referenced in the Order, and other information which may be useful to Morton International, Inc. in implementing the Order. This list is not exhaustive in that it does not include every guidance document applicable to work performed under a RCRA §3013 Administrative Order.

"*Health and Safety Requirements of Employees Employed in Field Activities*," EPA Order 1440.2, July 12, 1981.

"*RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (TEGD)*," OSWER Directive 9950.1, September 1986.

"*RCRA Facility Assessment (RFA) Guidance*," EPA/530/SW-86/053, October 1986.

"*Data Quality Objectives for Remedial Response Activities*," EPA/540/G-87/003 & 004, OSWER Directive 9335.0-7B, March 1987.

"*Alternate Concentration Limit Guidance, Part 1: ACL Policy and Information Requirements*," Interim Final, OSWER Directive 9481.00-6C, July 1987.

"*A Compendium of Superfund Field Operations Methods*," Two Volumes, EPA/540/P-87/001a&b, OSWER Directive 9355.0-14, August 1987.

"*Technology Screening Guide for Treatment of CERCLA Soils and Sludges*," EPA/540/2-88/004, September 1988.

"*Ground-Water Modeling: An Overview and Status Report*," EPA/600/2-89/028, December 1988.

"*Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual*," Interim Final, EPA/540/1-89/001, March 1989.

"*Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Reference Document*," EPA 600/3-89/013, March 1989.

"*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*," Interim Final, EPA/530/SW-89/026, April 1989.

"*Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells*," EPA/600/4-89/034, April 1989.

"*Interim Final RCRA Facility Investigation (RFI) Guidance*," Volumes I-IV, EPA/530/SW-89-031, May 1989.

"*Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A)*," Interim Final, EPA/540/1-89/002, December 1989

"*Air/Superfund National Technical Guidance Study Series*," Volumes I-IV, EPA 450/1-89-001,002,003,004 (1989 and 1990).

"*Framework for Ecological Risk Assessment*," EPA/630/R-92/001, February 1991.

"*Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*," OSWER Directive 9285.6-03, March 25, 1991.

"*Handbook: Ground Water*," Volumes I and II, EPA/625/6-90/016 (a&b), September 1990 and July 1991.

"*Characterizing Heterogeneous Wastes: Methods and Recommendations*," EPA/600/R-92/033, Feb. 1992.

"*Final Guidance for Data Useability in Risk Assessment*," (Parts A & B), OSWER Directive 9285.7-09A, April 1992.

"*Handbook of RCRA Ground-Water Monitoring Constituents: Chemical and Physical Properties*," EPA/530/R-92/022, September 1992.

"*Ground-Water Monitoring: Draft Technical Guidance*," EPA/530-R-93-001, November 1992.

"*Statistical Training Course for Ground-Water Monitoring Data Analysis*," EPA/530/R-93/003, 1992.

"*Subsurface Characterization and Monitoring Techniques: A Desk Reference Guide*," EPA/625/R-93/003b, May 1993.

"*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*," SW-846, Third Edition as amended by Update III or latest, U.S. EPA, June 1997.

"*Standard Guide for Risk Based Corrective Action Applied to Petroleum Release Sites*," ASTM E-1739-95, November 1995. (As approved by Region 5 guidance policy)

"*Conducting Risk-Based Corrective Action for Federally-Regulated UST Petroleum Releases*," U.S. EPA, Region 5, December 7, 1995.

"*Sitting at the RCRA Data Quality Level Table, Update 1*," U.S. EPA, Region 5, Memorandum, December 14, 1995.

"*Soil Screening Guidance: Users Guide*," OSWER Publication 9355.4-23, April 1996.

"*Soil Screening Guidance: Technical Background Document*," EPA/540/R-95/128, May 1996.

"*Region 5 Ecological Data Quality Levels*," Final Report, August 26, 1996.

"*EPA's Proposed Guidelines for Ecological Risk Assessment*," 61 Fed. Reg. 47552, September 9, 1996. (Note: Final document to be released in early-1998.)

"*Ecological Data Quality Levels, RCRA Appendix IX Hazardous Constituents*," U.S. EPA, Region 5, Draft Report, August 18, 1997.